

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Wood grounds, nailers, and blocking.
 - 2. Sheathing.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 6 Section "Finish Carpentry" for nonstructural carpentry items exposed to view and not specified in another Section.

1.3 DEFINITIONS

- A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise specified.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for the following products:
 - 1. Sheathing.

-
2. Air-infiltration barriers.
 3. Construction adhesives.
- C. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.
 3. For fire-retardant-treated wood products, include certification by treating plant that treated materials comply with specified standard and other requirements as well as data relative to bending strength, stiffness, and fastener-holding capacities of treated materials.
- D. Material test reports from a qualified independent testing agency indicating and interpreting test results relative to compliance of fire-retardant-treated wood products with requirements indicated.
- E. Warranty of chemical treatment manufacturer for each type of treatment.
- F. Research or evaluation reports of the model code organization acceptable to authorities having jurisdiction that evidence the following products' compliance with building code in effect for Project.
1. Air-infiltration barriers.
 2. Power-driven fasteners.
 3. Fire-retardant-treated wood.
- 1.5 QUALITY ASSURANCE
- A. Single-Source Responsibility for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product from one source and by a single producer.
-

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Fire-Retardant-Treated Materials, Interior Type A:
 - a. Hickson Corp.
 - b. Hoover Treated Wood Products, Inc.
 - 2. Gypsum Sheathing Board:
 - a. Georgia-Pacific Corp.
 - b. National Gypsum Co.; Gold Bond Building Products Division.
 - c. United States Gypsum Co.
 - 3. Metal Framing Anchors:
 - a. Cleveland Steel Specialty Co.
 - b. Silver Metal Products, Inc.
 - c. Simpson Strong-Tie Company, Inc.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWWA C2 (lumber) and AWWA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
 - 1. Do not use chemicals containing chromium or arsenic.



-
- B. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively.
 - C. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m).
 - D. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPAC M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated wood is indicated, comply with applicable requirements of AWPAC C20 (lumber) and AWPAC C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL; U.S. Testing; Timber Products Inspection, Inc.; or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Research or Evaluation Reports: Provide fire-retardant-treated for which a current model code research or evaluation report exists that evidences compliance of fire-retardant-treated wood for application indicated.
- B. Interior Type A: For interior locations, use chemical formulation that produces treated lumber and plywood with the following properties under conditions present after installation:
 - 1. Bending strength, stiffness, and fastener-holding capacities are not reduced below values published by manufacturer of chemical formulation under elevated temperature and humidity conditions simulating installed conditions when tested by a qualified independent testing agency.
 - 2. No form of degradation occurs due to acid hydrolysis or other causes related to treatment.



- 3. Contact with treated wood does not promote corrosion of metal fasteners.

- C. Exterior Type: Use for exterior locations and where indicated.
- D. Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

2.4 BOARDS

- A. Provide lumber with 19 percent maximum moisture content.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.

2.6 STRUCTURAL-USE PANELS FOR BACKING

- A. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant-treated plywood panels with grade, C-D Plugged Exposure 1, in thickness indicated or, if not otherwise indicated, not less than 15/32 inch (11.9 mm) thick.

2.7 GYPSUM SHEATHING

- A. Gypsum Sheathing Board: Water-resistant-core gypsum sheathing board complying with ASTM C 79 with long edges surfaced with water-repellent paper and as follows:
1. Type: X.
 2. Edge Configuration: Square, for vertical application.
 3. Thickness: 5/8 inch (16 mm).
- B. Glass-Fiber-Surfaced Gypsum Sheathing Board: Gypsum sheathing board consisting of noncombustible gypsum core incorporating a water-resistant material, surfaced on face and back with glass-fiber mats with alkali-resistant coating, and with unsurfaced square edges; complying with ASTM C 79, and requirements indicated below:
1. Type: X.
 2. Thickness: 5/8 inch (16 mm).
 3. Comply with requirements of Division 7 Section "Exterior Insulation and Finish Systems--Class PB."

2.8 TAPES AND SEALANT

- A. Sheathing Tape: Tape specifically designed and manufactured to seal joints in gypsum sheathing against water and air infiltration, formulated with an adhesive that permanently bonds to gypsum sheathing substrates, and as indicated below:
1. Linerless, polypropylene sheathing tape, 0.0027 inch (0.07 mm) thick, 2-1/2 inches (63 mm) wide, composed of oriented polypropylene backing coated with permanent acrylic adhesive formulated to adhere to gypsum sheathing surfaces.
 2. Polyethylene tape, 0.025 inch (0.63 mm) thick, 3 inches (76 mm) wide, composed of polyethylene backing coated with synthetic-rubber-based adhesive.
 3. Self-adhering, glass-fiber tape, 2 inches (51 mm) wide, 10-by-10 or 10-by-20 threads per inch (25.4 mm), of type recommended by tape manufacturer to use with siliconized emulsion sealant in sealing joints and fasteners for gypsum sheathing, and with a history of successful in-service use.
 4. Available Products: Subject to compliance with requirements, sheathing tapes that may be incorporated in the Work include, but are not limited to, the following:
 - a. No. 8086 Contractor Sheathing Tape; 3M Construction Markets.

-
- b. Perma-Tite Tape--PGM 207A; PermaGlass-Mesh, Inc.
 - c. POLYKEN 612 Seam Seal Tape; Polyken Technologies.
 - d. Quik-Tape; Quik-Tape, Inc.
- B. Silicone Emulsion Sealant: Product complying with ASTM C 834, compatible with sealant tape and gypsum sheathing, recommended by manufacturers of both sheathing and tape for use with glass-fiber sheathing tape and for covering exposed fasteners.
- 1. Product: Subject to compliance with requirements, provide Elmer's Siliconized Acrylic Latex Caulk; Borden, Inc.

2.9 AIR-INFILTRATION BARRIER

- A. Asphalt-saturated organic felt complying with ASTM D 226, Type I (No. 15 asphalt felt), unperforated.

2.10 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
- B. Sheathing Fasteners: ASTM C 954, steel drill screws, Type S-12 fluted tip, a minimum of 1-1/4 inches (32 mm) long, with organic-polymer coating or other corrosion-protective coating.
- C. Nails, Wire, Brads, and Staples: FS FF-N-105.
- D. Power-Driven Fasteners: CABO NER-272.
- E. Bolts: Steel bolts complying with **ASTM A 307, Grade A** (**ASTM F 568, Property Class 4.6**); with **ASTM A 563** (**ASTM A 563M**) hex nuts and, where indicated, flat washers.

2.11 MISCELLANEOUS MATERIALS

-
- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32 inch (0.8 mm); selected from manufacturer's standard widths to suit width of sill members indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- E. Securely attach rough carpentry work to substrate by anchoring and fastening, complying with the following:
1. CABO NER-272 for power-driven staples, P-nails, and allied fasteners.
 2. "Table 23-I-Q--Nailing Schedule" of the Uniform Building Code.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install wood grounds, nailers, blocking, and sleepers where shown and where required for screeding or attaching other work. Form to shapes shown and cut as required for true line and level of attached work. Coordinate locations with other work involved.

-
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

3.3 INSTALLATION OF STRUCTURAL-USE PANELS

- A. General: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
 - 1. Comply with "Code Plus" provisions of above-referenced guide.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Plywood Backing Panels: Screw to supports.

3.4 GYPSUM SHEATHING

- A. General: Install gypsum sheathing board according to manufacturer's instructions and GA-253 "Application of Gypsum Sheathing." Fasten gypsum sheathing to supports with galvanized roofing nails or divergent point galvanized staples. Nail or staple to comply with manufacturer's recommended spacing and referenced fastening schedule. Keep perimeter fasteners **3/8 inch (10 mm)** from edges and ends of units. Fit units tightly against each other and around openings.
- B. Install **48-by-96-inch (1219-by-2438-mm)** or longer sheathing vertically with long edges parallel to, and centered over, studs. Install solid blocking where end joints do not bear against framing sills or track. Fasten gypsum sheathing board to perimeter framing and to each stud with self-drilling, bugle-head screws, located a minimum of 3/8 inch (9.5 mm) from ends and edges of board units, as follows:
 - 2. Space fasteners not more than 8 inches (200 mm) apart around perimeter at edge and end supports and 8 inches (200 mm) apart at intermediate supports.



0.1 TAPE AND SEALANT APPLICATION

- A. Sheathing Tape: Apply sheathing tape to joints in sheathing; overlap tape by not less than the tape width at joint intersections.
 - 1. For polyethylene tape, apply primer, specified by tape manufacturer, to sheathing surfaces. In addition, apply polyethylene tape, 2 inches (50 mm) square, to completely cover each exposed fastener.
 - 2. For glass-fiber tape, apply approximately a 3/8-inch (10-mm) bead of siliconized emulsion sealant to tapes along joints and embed sealant into tapes along their entire surface with a trowel. In addition, apply sealant with a trowel to each exposed fastener so that fasteners are completely covered.

3.5 FIBERBOARD SHEATHING

- A. Fasten fiberboard sheathing panels to intermediate supports and then at edges and ends. Use galvanized roofing nails or galvanized staples. Nail or staple to comply with manufacturer's recommended spacing and referenced fastening schedule. Drive fasteners flush with surface of sheathing and locate perimeter fasteners at least **3/8 inch (10 mm)** from edges and ends.
- B. Install **48-by-96-inch (1219-by-2438-mm)** or longer sheathing vertically with long edges parallel to, and centered over, studs. Install solid wood blocking where end joints do not occur over framing. Allow **1/8-inch (3-mm)** open space between edges and ends of adjacent units. Stagger horizontal joints, if any.
- C. Apply air-infiltration barrier over sheathing as soon as practical after installation to prevent deterioration from wetting.

3.6 AIR-INFILTRATION BARRIER

- A. Cover sheathing with air-infiltration barrier as follows:
 - 1. Apply asphalt-saturated organic felt horizontally with **2-inch (50-mm)** overlap and **6 inch (150 mm)** end lap; fasten to sheathing with galvanized staples or roofing nails.

2. Apply air-infiltration barrier to cover upstanding flashing with 4-inch (100-mm) overlap.

END OF SECTION 06100

